GIS
Gas Insulated Switchgear 420kV
The company serves its customers!

Leading company in the industrial electric, electronic, materials and energy field following its separation from LG in 2003. LS aims to develop into a company that provides its clients with total solutions, contributes to the overall society, and offers a business environment where employees can realize their dreams.
Innovators in industrial electrical and automation systems

LSIS goes toward a global leading company in the Industrial electric & Automation field, providing customers with the total solution. We provide customers with distinctive and eco-friendly products & Win-Win Strategy in the various fields such as Power Transmission & Distribution; Electric Equipment; Automation Equipment & Systems and Smart Grid.
Modular Design

With only a few modules. All typical configuration can be realized

**Economical efficiency**
Compact design can reduce space requirement and operating costs. Modular system cuts construction time and dramatically save economical costs.

**Reliability**
Maximize system security with a minimum of maintenance.

**Convenience**
Modular system makes our GIS easier to operate.

**High appliance**
Modular system can satisfy customer's various needs and lay out requests

**Environmentally friendly**
Significant downsize for Compact size & Minimize the usage of SF₆ gas

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**420kV GIS Construction & Single Line Diagram**

1. Main bus
2. Bus disconnector
3. Earthing switch for maintenance
4. Current transformer
5. Circuit breaker
6. Line disconnector
7. Earthing switch for making-proof
8. Bushing
9. Insulating spacer
10. Operating mechanism for CB
11. Potential Transformer

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Potential Transformer
Line disconnector with maintenance earthing switch
Bus disconnector with maintenance earthing switch
Earthing Switch
Current Transformer
Circuit Breaker
Bus
Bushing
Compartments

Circuit Breaker

Our Circuit breaker has highly efficient arc quenching performance and the insulation characteristics of the SF$_6$ gas based on the reliability design. We adopts the puffer-type, which has a simple structure and operation principle.

Earthing Switches

The Earthing switches are operated by motor charged spring, motor or manual-type, accordingly to their performance case. There are two different types of earthing switches: The earthing switch for device's maintenance and the high-speed earthing switch for insertion into a circuit that has been accidentally energized.
Disconnecting Switch

Our Disconnecting Switch is easy to operate and equipped with safety features based on the reliability design. It is used to segment the charge current section partitioned by the circuit breaker and operated by an electric motor.

Current Transformer

Current transformer protects the device by sensing any fault current in the line. It is important to detect fault current, and it takes pre-caution against possible accident.
# Technical Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>kV, rms</td>
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<tr>
<td>Rated short-time current</td>
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<tr>
<td>Rated short-time</td>
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<tr>
<td>Rated breaking current</td>
<td>kA, rms</td>
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<tr>
<td>Rated current</td>
<td>A, rms</td>
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<tr>
<td>Rated frequency</td>
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<tr>
<td>Rated making current</td>
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<tr>
<td>Rated breaking time</td>
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<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Power Frequency Withstand Voltage</td>
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<td>Common</td>
<td>kV, rms</td>
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<tr>
<td>Across the isolating distance</td>
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<td>Lightning Impulse Withstand Voltage</td>
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<tr>
<td>Common</td>
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<tr>
<td>Across the isolating distance</td>
<td>kV, peak</td>
<td>1425(+240)</td>
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<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Rated operating sequence</td>
<td></td>
<td>O - 0.3sec - CO - 3min – CO</td>
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<tr>
<td>Phase arrangement</td>
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<tr>
<td>Main Bus</td>
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<td>Single phase segregated</td>
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<tr>
<td>Feeder Bus</td>
<td></td>
<td>Single phase segregated</td>
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<tr>
<td>Operating Mechanism</td>
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<tr>
<td>CB</td>
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<td>Hydraulic</td>
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<tr>
<td>DS</td>
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<td>Motor</td>
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<tr>
<td>ES</td>
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<td>Motor</td>
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<table>
<thead>
<tr>
<th>Applicable Standard</th>
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<tr>
<td></td>
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<td>IEC 62271-100 / IEC 62271-203 / IEC 62271-102 / IEC 60694</td>
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</table>
Quality Assurance

The Quality Assurance Program by LSIS provides strict quality control from promotion, manufacture and delivery in compliance to ISO 9001. It is our goal to provide world-best product to our customers, only to be done by maintaining the latest quality system and service.

The outstanding quality of our products is based on manufacturing in accordance with international standards. We also provide the Total Solution that encompasses design, engineering, efficient production and installation as well as highly accurate testing and analysis of power equipment.
Layout - Typical Bay Arrangement

**Double Bus Feeder (1 1/2 CB Bushing Type)**
Manufacturing

Manufacturing Process
Each stage is strictly controlled for the quality and all the assembly works are done in a clean room to ensure the highest level of insulation of the GIS. The GIS is completely assembled in an assembling room according to the customer's layout and it shall be done the final routine test and assembling check in accordance with customer's requirement to prevent every possible failure. Only those products that have passed the test are delivered to our customer.

GIS Manufacturing
LSIS obtained certification about major research and development tasks in some leading countries and continues to invest in developing the best GIS product for our customers worldwide. To produce highest quality GIS, optimized design is conducted through 3D electric field analysis, arc diagnosis and structure & temperature analysis.

**Electro Technology R&D Center**

- **Multi-Physics Technology**
  - DS/ES unit temperature prediction using electro-Magnetic field and temperature flow analysis.
  - Optimized Electric Field Control
  - 3D electric field analysis is used for effective space design and optimization

- **Interruption Performance Analysis**
  - Arc movement prediction to evaluated breaker capability

**Power Testing & Technology Institute**

PT&T is a KOLAS-qualified (Korea Laboratory Accreditation Scheme) accredited testing laboratory and provides worldwide testing service with its 1,600MVA-capacity high power laboratory, high voltage laboratory and reliability testing laboratory.

- **High Voltage Test | Impulse Test**
Worldwide Network

LSIS offers unique value proposition

Strong commitment to R&D with numerous international certifications and approvals
- Equipped with unparalleled R&D capability allowing fast and flexible product development; ready to assist customers if they want to export current system to other regions
- Achieved numerous international approvals

Wide assortment of products with unparalleled cost competitiveness
- Cutting-edge technology with wide assortment from low and medium to high voltage for circuit breakers
- In-house power testing lab (PT&T) for quality assurance

Global infra and networks enabling JIT manufacturing and supplying
- Global warehouses – Korea, China, Netherland, UAE and America
- Sales and service networks in all over the world.
- 7 manufacturing sites in Korea/China/Vietnam

Readily available technical support and well designed training programs
- On-site technical support and on-line web-based assistance to meet end-customer needs
- Tailored training programs, to be offered via multiple channels
We are the first domestic private enterprise with a short-circuit test equipment of 1,600MVA capacity, high-voltage test equipment, reliability test equipment and a KOLAS recognition, providing global-standard test assessment services. The institute enjoys a global public confidence, through strategic cooperation, and reciprocal recognition of test reports, with UL (American safety standards), CE (EU recognition logo), The Netherland’s KEMA, Italy’s CESI and other overseas accredited testing institutes.

LSIS engages in business activities around the world. The company has a global network that includes four overseas corporations and eight overseas branches. It also has 224 business partners in 77 countries.

<table>
<thead>
<tr>
<th>Overseas Corporations</th>
<th>Dalian and Wuxi (China), Hanoi (Vietnam), Dubai (UAE), Europe B.V (Netherlands)</th>
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<tbody>
<tr>
<td>Overseas Branches</td>
<td>Shanghai, Beijing, Guangzhou, Chengdu, Qingdao (China), Tokyo (Japan), Germany, India</td>
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<tr>
<td>Global Service Centers</td>
<td>Shanghai, Beijing, Guangzhou (China)</td>
</tr>
<tr>
<td>Global R &amp; D Centers</td>
<td>Shanghai, Beijing (China)</td>
</tr>
<tr>
<td>Presence Internationally</td>
<td>77 Countries</td>
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Specifications in this catalog are subject to change without notice due to continuous product development and improvement.